PRELIMINARY CLOSE OUT REPORT

Solitron Microwave Superfund Site
Port Salerno, Martin County, Florida

I. INTRODUCTION

This Preliminary Close Out Report (PCOR) documents that the U.S. Environmental Protection Agency (EPA) completed construction activities for the Solitron Microwave Site ("Site") in accordance with *Close Out Procedures for National Priorities List Sites* (OSWER Directive 9320.2-09A-P). EPA conducted a pre-final inspection on June 23, 2004, and determined that the remedy had been constructed in accordance with the remedial design (RD) plans and specifications which were developed in accordance with the Record of Decision for the Site. EPA and the Florida Department of Environmental Protection (FDEP) have initiated activities necessary to achieve performance standards and site completion.

II. SUMMARY OF SITE CONDITIONS

Background

The Solitron Microwave Site is a 20 acre site located on Cove Road approximately ¾ miles east of U.S. Highway 1, in Port Salerno, Martin County, Florida. The site is surrounded by a residential area consisting of a gated condominium complex and many private homes. Approximately 150 private homes north and east of the site have historically obtained their drinking water from individual private wells.

From 1968 until January 1987, Solitron operated a plating and manufacturing business at the Site. The facility manufactured microwave components and miniature-size frequency connectors and cable, as well as solid state resistor networks associated with electroplating. Prior to that time, from 1963 to 1968, General R.F. Fittings operated the Site. The company reportedly conducted plating operations similar to Solitron's.

Through investigations conducted by the FDEP and EPA, it was determined that tetrachloroethene (PCE), trichloroethene (TCE), and their degradation products (e.g., 1,1-dichloroethene [1,1-DCE], cis 1,2-dichloroethene [cis 1,2-DCE], and vinyl chloride) were present in the onsite and offsite groundwater at levels above EPA and FDEP maximum contaminant limits (MCLs).

These groundwater contaminants posed the greatest risk to human health through the potential for ingestion of contaminated groundwater. Concentrations of contaminants in the soil both on site and off site have been, and continue to be, within the acceptable risk range, and therefore, do not pose a threat.

EPA proposed the Site to the National Priorities List (NPL) on March 5, 1998 and added it to the NPL on July 27, 1998.

Remedial Construction Activities

On November 1, 2000, the Record of Decision (ROD) selecting the remedial action (RA) for the Site was signed. The remedy selected included extending water lines to homes and businesses within the area approximately 3/8 mile north and east of the Site, treating the groundwater via chemical oxidation supplemented by monitored natural attenuation, excavating approximately 400 cubic yards of soil containing contaminants which continued to contaminate the groundwater, and implementing institutional controls to prevent the consumption of contaminated groundwater until the cleanup goals are met.

The performance standards for soil and groundwater specified in the ROD are contained in Tables 1 & 2 below. The soil cleanup levels were developed to prevent further leaching of contaminants to groundwater. The groundwater cleanup levels are health based and are the most stringent of federal or state drinking water standards.

TABLE 1
ROD SOIL CLEANUP LEVELS

Contaminant	Soil Clean-Up Level (mg/kg)
Tetrachloroethene	0.03
Trichloroethene	0.03
cis-1,2-Dichloroethene	0.4

TABLE 2
ROD GROUND WATER CLEANUP GOALS

Contaminant of Concern	Short Term Cleanup Goal [1] (ug/l)	Long Term Cleanup Goal (ug/L)
Tetrachloroethene	300	3[2]
Trichloroethene	300	3[2]
1,1-Dichloroethene	700	7[3]
cis-1,2-Dichloroethene	700	70[3]
trans-1,2-Dichloroethene	1000	100[3]
Vinyl Chloride	100	1[2]

[1] *Short term cleanup goals are consistent with Florida's Natural Attenuation Default Criteria.*
[2] *Florida Primary Drinking Water Standard*
[3] *Federal Primary Drinking Water Standard*

Short term and long term cleanup goals were established for groundwater. Active treatment of the groundwater via chemical oxidation was to be implemented in all areas where the groundwater contaminant levels were above the short term cleanup goals thereby addressing all the groundwater source areas. After the source areas had been treated, monitored natural attenuation was to be used to reach the long term cleanup levels.

On December 4, 2000, EPA issued a work assignment to the EPA's Remedial Action Contractor (RAC) to develop a workplan for the Remedial Design (RD). EPA approved the RD workplan on November 7, 2001. In May 2002, as part of the RD effort, another round of groundwater samples were collected. Upon review of the 2002 groundwater data it was apparent that the groundwater contaminant levels had dropped substantially since the previous (1999) groundwater sampling event. Therefore, EPA and the Florida Department of Environmental Protection (FDEP) agreed that the groundwater contamination could be addressed through monitored natural attenuation only and that treatment via chemical oxidation was not necessary. EPA directed the RAC to design a monitored natural attenuation sampling plan and groundwater monitoring well network. As a result, in June 2003, additional groundwater monitoring wells were installed and another round of groundwater samples were collected.

The task of extending municipal water lines to the community north and east of the Site was given to the Martin County Utilities Department. On April 24, 2001, EPA approved a Cooperative Agreement between EPA and Martin County, Florida, which provided Martin County the funds to design the municipal water line extensions. Upon completion of the design, no EPA remedial action funds were available to start the project. Therefore, EPA and the State of Florida entered into a contract in which the State would provide Martin County the funds to construct the municipal water lines in exchange for a remedial action credit from EPA which

could be used to offset the State's future remedial action cost share commitments at this and other Superfund sites. In August 2002, Martin County began construction of the municipal water line extensions which provided approximately 150 homes the opportunity to connect to public water. On May 29, 2003, EPA approved the survey drawing package showing the final locations of the municipal water line extensions which signified the completion of this portion of the remedial action.

In December 2002, the U.S. Army Corps of Engineers (USACE), through a cooperative agreement with EPA, conducted the soil excavation portion of the remedy. Approximately 400 cubic yards of soil were excavated and staged on site. The excavated soil was characterized and disposed of in a Subtitle D landfill.

In March 2003, the 20 acre property was sold to a local developer who plans to develop a light industrial park on the property. A Prospective Purchaser Agreement (PPA) was entered into by the EPA, the Department of Justice, and the developer. The PPA required the prospective purchaser to place a deed notice on the property, which was completed in January 2004 and prevents the use of groundwater in contaminated areas until the cleanup standards are met.

In August 2003, following the sale of the property, the new owner demolished the existing building including the concrete slab and footer. As a result, the USACE working with EPA, excavated additional contaminated soil that had previously been beneath the building slab. This soil was also staged on site, characterized, and later disposed of in a Subtitle D landfill. The last of the contaminated soil was removed from the site in June 2004.

Remaining activities include approval of the proposed monitored natural attenuation sampling plan which has been submitted to EPA and is currently under review by EPA and FDEP. This sampling plan will require the periodic sampling of selected groundwater monitoring wells in order to monitor the progress of natural attenuation. Based on groundwater data collected to date, it appears that natural attenuation is occurring and will achieve the cleanup goals within a reasonable timeframe.

No activities using removal authority were conducted at this site.

III. DEMONSTRATION OF CLEANUP ACTIVITY QUALITY ASSURANCE AND QUALITY CONTROL

The Quality Assurance Project Plan (QAPP) incorporated all EPA and State QA/QC procedures and protocol. EPA analytical methods were used for all confirmation and monitoring samples during remedial action activities. Construction activities at the Site were determined to be consistent with the ROD and RD plans and specifications. EPA and the State determined that analytical results are accurate to the degree needed to assure satisfactory execution of the remedial action.

IV. ACTIVITIES AND SCHEDULE FOR SITE COMPLETION

Task	Estimated Completion	Responsible Organization
1) Approve MNA Sampling Plan	09/30/04	EPA/State
2) Interim RA Report	09/30/04	EPA
3) Five-Year Review	08/01/09	EPA
4) Approve Final RA Report	12/30/12	EPA/State
5) Approve Final Closeout Report	06/30/13	EPA
6) Deletion From NPL	09/30/14	EPA

V. SUMMARY OF REMEDIATION COSTS

The original total cost estimate to implement the remedial action described in the ROD was $3.9 million (present worth). Cost were estimated for an anticipated 25 years to reach groundwater cleanup standards and a discount rate of 3.5% was used in the ROD estimate. More detailed cost estimate documentation can be found in the Feasibility Study for the Site.

The remedial action was conducted in three distinctly different phases. The extension of municipal water lines was the first phase of the remedial action that was conducted. The water lines were constructed by Martin County and funded by the State of Florida at a cost of $1,019,767. EPA and the State of Florida negotiated an agreement whereby Florida agreed to fund the extension of the municipal water lines in exchange for a credit from EPA equal to the cost of the remedial action. Upon EPA approval of the total remedial action costs, this credit can be used by the State to offset its future remedial action cost share requirements.

The excavation of the contaminated soil was conducted by the US Army Corps of Engineers (USACE), Jacksonville District at a cost of $342,517. The contaminated soil was excavated, confirmation sampling was conducted and clean fill was placed in the excavated areas. The contaminated soil was staged on site and sampled for disposal. Upon review of the sampling results and approval by FDEP, it was decided that the soil could be properly disposed of in a Subtitle D landfill.

The final phase of the cleanup was for remediation of the contaminated groundwater. The ROD called for In-Situ Chemical Oxidation to be implemented in areas where the groundwater

concentrations exceeded the short term cleanup goals. After the short term cleanup goals were met, it was thought that the remaining groundwater contaminants would degrade via natural processes to the long term, health based, cleanup goals. However, upon review of the 2002 groundwater data, EPA and the State decided that In-Situ Chemical Oxidation would not be necessary because very few areas remained above the short term cleanup goal. Therefore, Monitored Natural Attenuation (MNA), the portion of the remedy designed to reach the long term cleanup goals, was designed. The first round of samples pursuant to MNA was conducted in June 2003 and a second round was conducted in June 2004. It is estimated that the cost of implementing MNA for ten years will be $500,000 after which the State of Florida will assume the cost of groundwater monitoring if the long term cleanup goals have not been met. Therefore, the total cost of the remedial action is expected to be $1.86 million, approximately half of the ROD estimate. This decrease in cost is largely due to the fact that In-Situ Chemical Oxidation was not necessary.

VI. FIVE-YEAR REVIEW

A policy Five-Year review is required for the Solitron Microwave Site because when the cleanup levels specified in the ROD are met, the remedy will allow for unlimited use and unrestricted exposure. However, since it will take longer than five years to achieve unlimited use and unrestricted exposure, as a matter of policy, EPA must conduct a Five-Year review. The first policy Five-Year review will be completed prior to August 2009 which is five years after construction completion determined by the signature of this document.

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Date